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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,867	04/12/2001	Shunpei Yamazaki	740756-2294	1394

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EXAMINER

LEWIS, MONICA

ART UNIT PAPER NUMBER

2822

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,867

Applicant(s)

YAMAZAKI ET AL.

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14,25-38 and 51-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4,6,8,10,12,25-38 and 51-64 is/are allowed.
- 6) ☒ Claim(s) 1,5,9 and 13 is/are rejected.
- 7) ☒ Claim(s) 3,7 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed June 2, 2006.

Response to Arguments

2. Applicant's arguments with respect to claims 1-14, 25-38 and 51-64 have been considered but are moot in view of the new ground(s) of rejection.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (U.S. Patent No. 6,259,138) in view of Kamiura et al. (U.S. Patent No. 6,288,413) and Toshiba (Japanese Patent No. 408274336)(English Translation).

In regards to claim 1, Ohtani et al. ("Ohtani") discloses the following:

- a) a pixel portion having a n-channel TFT and a light emitting element over a substrate (101) (For Example: See Figure 1A);
- b) a channel forming region (104) (For Example: See Figure 1A);
- c) an n-type impurity region (108) adjacent to the channel forming region (For Example: See Figure 1A);

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d) an n-type impurity region (109) adjacent to the n-type impurity region (For Example: See Figure 1A);

e) a gate insulating layer (103) provided over the active layer (For Example: See Figure 1A);

f) a gate electrode (105) provided over the gate insulating layer (For Example: See Figure 1A);

g) a first conductive film (105a) provided over the gate insulating layer (For Example: See Figure 2E);

h) a second conductive film (105b) provided over the first conductive film, wherein the first conductive film overlaps the channel forming region and the n type impurity region with the gate insulating layer interposed therebetween, and wherein the second conductive film overlaps the channel forming region with the gate insulating layer and the first conductive film interposed between (For Example: See Figure 1A and Figure 2E); and

i) a protecting film (107) in contact with the gate insulating layer and the second conductive film (For Example: See Figure 1A).

In regards to claim 1, Ohtani fails to disclose the following:

a) a n-type impurity region adjacent to the n-type impurity region.

However, Kamiura et al. ("Kamiura") discloses the use of a n-type impurity region (12) adjacent to the n-type impurity region (11) (For Example: See Figure 1F). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Ohtani to include the use of a n-type impurity region adjacent to the n-type impurity region as disclosed in Kamiura because it aids in lowering OFF current (For Example: See Column 3 Lines 20-25).

Additionally, since Ohtani and Kamiura are both from the same field of endeavor, the purpose disclosed by Kamiura would have been recognized in the pertinent art of Ohtani.

b) the second conductive film has a thinner width as compared with the first conductive film.

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However, Toshiba discloses the use of a second conductive film (5) that has a thinner width as compared with the first conductive film (4) (For Example: See Figure 1D and 2C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Ohtani to include the use of a second conductive film that has a thinner width as compared with the first conductive film as disclosed in Toshiba because it aids in reducing leakage current (For Example: See Paragraph 13).

Additionally, since Ohtani and Toshiba are both from the same field of endeavor, the purpose disclosed by Toshiba would have been recognized in the pertinent art of Ohtani.

In regards to claim 13, Ohtani discloses the following:

a) the light emitting device is one selected from the group consisting of an EL display, a video camera, a digital camera, a portable computer, a personal computer, a portable telephone, and a car audio stereo (For Example: See Column 22 Lines 50-55).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (U.S. Patent No. 6,259,138) in view of Kamiura et al. (U.S. Patent No. 6,288,413), Toshiba (Japanese Patent No. 408274336) and *Silicon Processing* by S. Wolf.

In regards to claim 5, Ohtani discloses the following:

a) the second gate electrode comprises aluminum (For Example: See Column 6 Line 1-6).

In regards to claim 5, Ohtani fails to disclose the following:

a) the first conductive film comprises tungsten.

However, Wolf discloses the use of a conductive film that comprises tungsten (For Example: See Page 398). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Ohtani to include the use

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of tungsten as disclosed in Wolf because it aids in reducing leakage current (For Example: See Page 398).

Additionally, since Ohtani and Wolf are both from the same field of endeavor, the purpose disclosed by Wolf would have been recognized in the pertinent art of Ohtani.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtani et al. (U.S. Patent No. 6,259,138) in view of Kamiura et al. (U.S. Patent No. 6,288,413), Toshiba (Japanese Patent No. 408274336) and *Microchip Fabrication* by Peter Van Zant.

In regards to claim 9, Ohtani discloses the following:

a) the gate electrode is covered by an insulating film (111) (For Example: See Figure 1A).

In regards to claim 9, Ohtani fails to disclose the following:

a) the insulating film comprises at least one of a silicon nitride film and a silicon oxynitride film.

However, Van Zant discloses the use of silicon nitride (For Example: See Page 391). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Ohtani to include the use of silicon nitride as disclosed in Van Zant because it aids in providing better protection (For Example: See Page 391).

Allowable Subject Matter

8. Claims 3, 7 and 11 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 2, 4, 6, 8, 10, 12, 14, 25-38 and 51-64 are allowed.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

ML
August 18, 2006

A handwritten signature in black ink, appearing to be 'ML', is located at the bottom right of the page.